

Appln No. 10/004,458

Amdt date August 30, 2005

Reply to Office action of July 1, 2005

Amendments to the Specification:

Please replace the paragraph beginning on page 8, line 23 with the following rewritten paragraph:

Figure 3 is a diagrammatic representation of a control record 331. As noted above, any structure containing data and information on how to process the data is herein referred to as a control record. The control record 331 can include header information 301 to indicate to a scheduler where the control record should be passed. The control record can also contain data, references to data, or pointers to data 303 and 305 that indicate where the data 321 and 323 reside in memory. According to various embodiments, the control record is object-oriented and contains data and references on how to process the data. The information on how to process the data (309) can be contained in memory as well. Typical operations for public key processing include RSA and Diffie-Hellman.

Please replace the paragraph beginning on page 10, line 15 with the following rewritten paragraph:

Accordingly, the techniques of the present invention contemplate delaying the generation of an interrupt associated with a younger control record processed before ~~[[and]]~~ an older control record. In one embodiment, the delay can be implemented by collapsing the interrupt enable indicator from a younger control record associated with data 435 to an older control record associated with data 425. Delaying the generation of an interrupt associated with younger data is herein referred to as

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interrupt collapsing. In one example, interrupt collapsing involves moving an interrupt generator from a younger control record to an older control record. An interrupt generator may be an interrupt indicator that causes a core to issue an interrupt.

Please replace the paragraph beginning on page 12, line 12 with the following rewritten paragraph:

According to various embodiments, if nothing is currently in the history buffer, information associated with the control record can be written to ~~[[be]]~~ the younger column 501b in history buffer 500b. The control record ID 511b, the interrupt enable bit 513b and the slot valid indicator 515b can be set. As noted above, some control records may cause a processor core to generate an interrupt after data processing by the processing engine is completed. If an interrupt should be generated, ~~[[and]]~~ an interrupt enable indicator 513b is set. In some embodiments, this may entail ~~[[set]]~~ setting a flag to 0x1. However, in order to avoid disrupting system operation, ~~[[and]]~~ an interrupt enable indicator may not be set at 513b for certain control records. ~~By triggering~~ Triggering interrupts only after a certain number of control packets are processed allows a system to continue operation with minimum disturbance. As noted above, generating interrupts after every control record is processed can significantly disrupt system performance. The slot valid bit 515b can be used to indicate that a control record is available for processing.

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Please replace the paragraph beginning on page 13, line 25 with the following rewritten paragraph:

However, in some instances, processing of younger data may complete before the processing of older data. An interrupt may then be generated before processing of older data is completed. An external host may get confused by the unexpected sequence of events. As noted above, in typical implementations an external host expects processing of older data to ~~the complete~~ be completed before processing of younger data. If the processing of younger data completes first, a host may stall or read incorrect data. In one example, a host may attempt to read a memory in sequence up to the point where the interrupt was generated. If an interrupt was generated before some of the data in the sequence was completely processed, errors may result.

Please replace the paragraph beginning on page 14, line 10 with the following rewritten paragraph:

An interrupt enable bit associated with the younger control record collapses onto the interrupt enable indicator associated with the older control record. That is, ~~[[and]]~~ an interrupt enable indicator associated with a younger control record can be changed from true to false while the interrupt enable indicator associated with the older control record can be set to true. As noted above, techniques for delaying the generation of an interrupt associated with a younger control record that has been processed before an older control record are referred to herein as collapsing interrupts. One example of interrupt collapsing is the moving of an interrupt enable indicator associated with a

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younger control record onto the interrupt enable indicator associated with an older control record.

Please replace the paragraph beginning on page 14, line 21 with the following rewritten paragraph:

FIG. 5D shows one implementation of interrupt collapsing. The interrupt enable indicator 513d associated with the younger control record is moved onto the interrupt enable indicator 519d associated with the older control record. Since the younger control record has completed processing, the slot valid indicator 515d can be set to false. The control record ID 511d can also be cleared. The older control record is now associated with an ID of 0x1, an interrupt enable indicator set to 0x1 or true, and a slot valid bit of one. With interrupt collapsing, the older control record generates interrupts when processing of the control record is completed even though it would not have generated an interrupt without interrupt collapsing. The older control record generates an interrupt because the interrupt enable indicator associated with the younger control record was moved to the interrupt enable indicator of the older control record.